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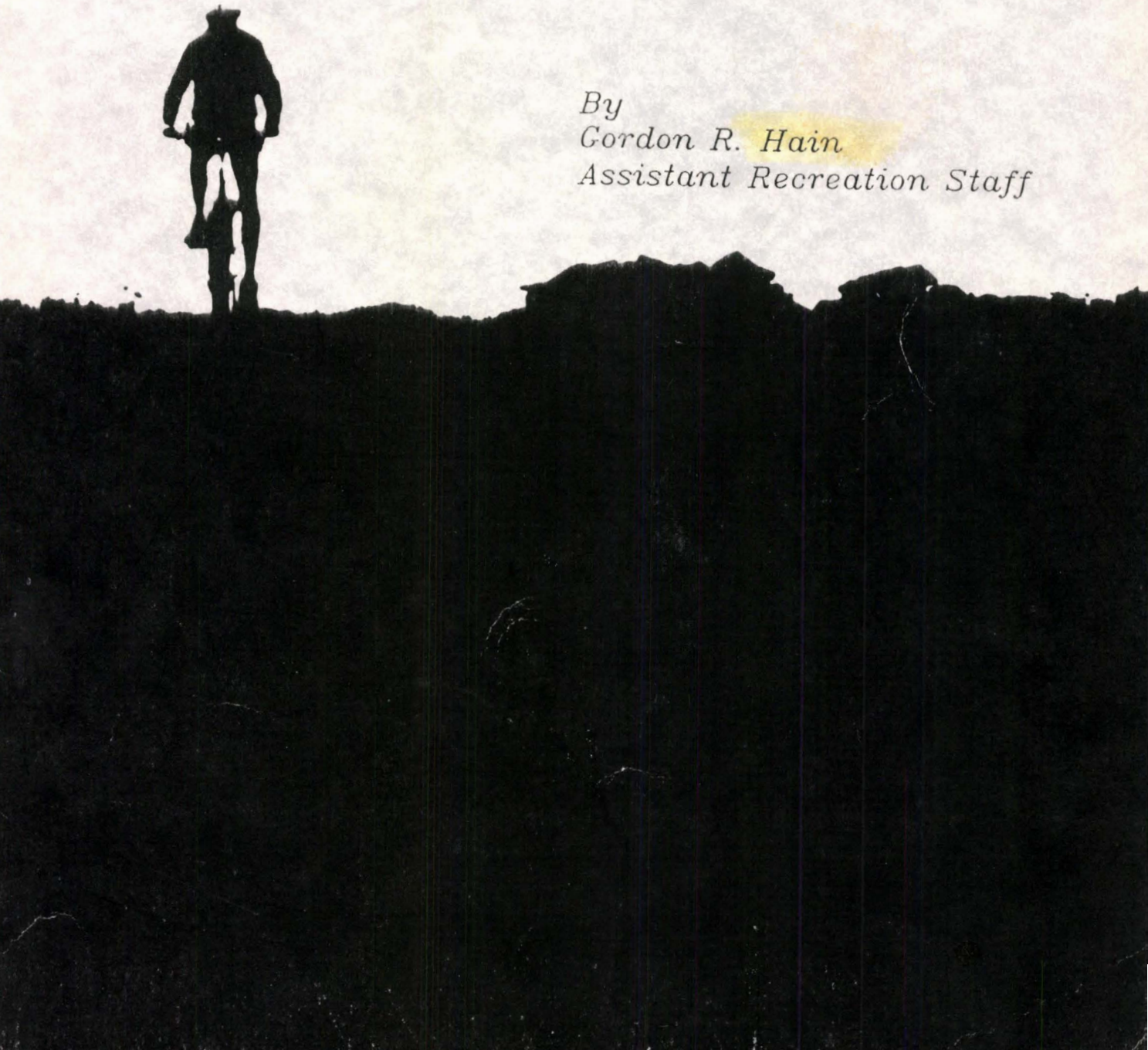
DEVELOPING MOUNTAIN BIKE OPPORTUNITIES ON THE OCHOCO NATIONAL FOREST



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ABSTRACT

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Title: Developing Mountain Bike Opportunities on the Ochoco National Forest

Abstract: Mountain biking is quickly becoming a favorite outdoor recreation activity for many people. The growing popularity and sales of these high-tech, fat-tired, geared for all types of terrain bicycles has opened a new prospective to recreation demand. People are finding it difficult to locate places to ride these bicycles away from motorized vehicles and away from conflict situations with other recreationists. There is a lack of information concerning mountain biking opportunities in most parts of the country. The Ochoco National Forest, with its 3700 miles of low standard roads and 50 miles of trail outside of Wilderness, has outstanding mountain biking opportunities. Outside of hunting season, the potential for conflict with other users is low and with other resource objectives is minimal. Currently, minor mountain biking occurs sporadically across the Forest, with some illegal riding in the Mill Creek Wilderness.

There are many opportunities on the Ochoco National Forest for easy and challenging biking over a variety of terrain. By combining literature research, contacts with mountain bike riders, and actual personal biking experience, this project identifies. Potential problems and conflicts, offers possible solutions, look at rider needs, and determines route standards. This project recommends an initial system of routes to be developed on the Forest to offer a variety of mountain bike opportunities.Publicizing these routes through signing, advertising with press releases and the development of brochures is recommended.

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INTRODUCTION

The development of the mountain bike has created new opportunities for outdoor recreation enthusiasts. The use of the mountain bike on the national forests is relatively new. The demands for places to ride are increasing; and the potential of this activity conflicting with land management objectives and with other forest users is also increasing. The Forest Service has the opportunity to provide for a variety of mountain biking experiences while at the same time reducing conflicts with other users.

Forests near larger population centers, in particular, are finding that mountain bikes can present conflicts. There has been evidence and reports of mountain bike use in Wilderness.

The Ochoco Forest is in many ways ideal for mountain biking in that the potential for conflict with other users is relatively low; the soils, in particular, are such that potential damage to soil/watersheds is also low. There has however been illegal use of the bikes in the Mill Creek Wilderness, suggesting the specific need to develop routes for a "wilderness-like" experience. Elsewhere, situations exist on the Forest that would allow for a variety of biking opportunities.

This project was selected in recognition of the growing presence of mountain bikes on public lands. The occurrence of this new form of recreation on the Ochoco Forest was examined. An attempt has been made to identify travel routes which would offer a variety of biking challenges and outdoor experiences, while

minimizing conflicts with natural resources as well as with other recreationists.

A BRIEF HISTORY

Mountain bikes evolved during the bicycle boom of the 1970's. The first models were built from the old balloon-tired, heavy-framed Schwinn "paperboy bike". These forgotten relics became popular with "hippies" looking for cheap and easy transportation to the woods. Called "clunkers", these bikes became popular for woods riding and downhill racing in the 1970's (Nilsen 1978). A bicycle enthusiast in Marin County, California, named Gary Fischer modified the clunker by adding a 10-speed derailler gear system, thumb shifters on upright handlebars, and a quick release on the seat post. In partnership with Tom Ritchey and Charles Kelly, Fischer began manufacturing mountain bikes in 1979 (Kelly 1985). Others credited with design improvements include Craig Mitchell who built the first chrome-moly alloy framed model in 1976 and Joe Breeze, who in 1977, changed the frame geometry to increase stability and handling ease (Schubert 1982). Originally these "new breed" bikes sold for around $1400.

DEMAND

Demand for mountain bikes has increased drastically over the past few years. Bill Wilkinson, executive director of the Bicycle Federation of America, explained that prior to 1986 there were 1.1 million mountain bikes being used. In 1986, 1.5 million mountain bikes were sold. He's predicting over 2 million

will be sold in 1987. He feels that the mountain bike design will be the basic bicycle of the future because it can be adapted for in-town commuting, backroad riding, or primitive trail riding. Once on a mountain bike, one feels the comfort and stability of the big tires, the upright handlebars and the practical locations of the thumb shifters. The production of mountain bikes is increasing and the prices are dropping, making them available and affordable to more and more people.

PROCEDURES

Literature Review

Mountain bikes have been featured in a wide variety of periodicals, including Women's Sports and Fitness, High Country News, Field and Stream, Blair and Ketchum's Country Journal, Mechanic's Illustrated, Action Now, Backpacker, National Parks and Conservation, Outdoors, Boy's Life, and Sunset Magazine. Traditional bicycling magazines and new mountain biking magazines have carried many feature articles concerning mountain bikes.

Several technical books on mountain bikes have been published including the Complete Book of All-Terrain Bicycles by Eugene A. Sloane, The Mountain Bike Book by Rob Van der Plas, and All-Terrain Bikes from the editors of Bicycling Magazine. Mountain biking guidebooks have appeared on the market such as

Cycling the California Outback with Bodfish, by Chuck "Bodfish" Elliot and Mountain Biking the High Sierra's by Dan and Reanne Douglass.

Guiding services have developed offering back country experiences all over the U. S. and Canada. Examples of such outfits include Grizzly Bear Tours, Pennsylvania; Rough Stuff Touring, Washington; The Road Less Traveled, Idaho; BikeCentennial, Montana; and Rim Tours, Utah. Many ski resorts, especially those with Nordic facilities, are offering mountain bike rentals and promoting their ski trails as mountian bike trails, thus extending the resorts' tourist seasons through most of the year.

Selection of a Mountain Bike

As a consequence of this project, I needed to obtain some field experience on a mountain bike. The first task was the selection and purchase of a mountain bike for the Ochoco National Forest, resulting in what is suspected to be the first official Forest Service-owned mountain bike. The selection process was a challenge in itself, seeing what the market had to offer. I read many articles, talked with dealers, and tested many different types of bikes, eventually selecting a moderately priced model. (See Exhibit 1 for factors to consider in selecting a mountain bike)

Fieldwork: Actual Riding

Having purchased a bicycle, I set out to explore the world of mountain biking. I met Bud Rogers, an avid local biker and arranged to ride the weekend after my purchase. He explained the basic riding techniques, gearing, weight shifting, seat positioning and feet positioning. Then off we went. This first trip was a real learning experience. At one point I stopped on a steep side hill only to find out there was no place to put my foot on the downhill side, so I

tumbled a ways down the rocky mountain slope. Wearing a safety helmet and being dressed warmly for the snowy day protected me from injury, but my pride was injured, as two young boys watched with astonishment. The incident underscored some of the potential hazards in mountain bike riding. The wearing of a safety helmet is certainly urged. The potential for injury should not be overlooked, especially as more riders seek out challenging experiences.

I learned much about what the bike could and couldn't do and what conditions were easy, which felt difficult, and which were impossible for me and my skills. I felt the thrill of the downhill run and the exhaustion of the uphill climb. I experienced a variety of conditions from wide roads to narrow trails; from steep downhill to long uphill; from rocky to sandy terrain. I pedalled through beautiful natural appearing areas and through heavily logged-over areas; over light snow cover to dry, dusty conditions; over downed trees and through open flats; over water-bars; and around obstacles. I found that the bicycle, being challenging, made trail travel exciting. Also, it offered a whole new perspective to the forest. I was amazed at how much more I could see and how many more areas I could access. On forest roads that I have driven in the past, the slower speed of the bike now gave me an opportunity to really look into the country, seeing the trees as part of the forest.

A view from Green Mountain

ISSUES

The literature review and field research identified several issues that need to be examined and considered in the development of mountain bike routes. Other issues will almost certainly develop as mountain bike use increases on public lands, but the instances and themes outlined below capture the current conflicts generated by this new recreational experience.

Mountain Bikes on Trails

Opinions vary as to whether or not mountain bikes should be allowed on trails. Stuart Crook of BikeCentennial, in Missoula, Montana, estimates that 80 percent

of the mountain bikers never leave the road, the majority preferring graded roads away from motorized vehicles. However, to many mountain bikers, trail riding is an important experience.Bicycling magazines support trail use, whereas backpacking magazines tend to favor bike use on roads and not on trails. Traditional trail users (hikers and horse riders) contend that these bikes are dangerous and cause damage to the resources; they propose that bikes be kept off trails (Locke 1984). Backpacker Magazine (Knizel & Chase 1987) warns of the potential for resource damage from mountain bikes, but realistically acknowledges that the bikes can't be banned from all trails. Chase, in particular, realizes that responsible mountain biking is appropriate on some trails but suggests that other trails and areas should be closed to mountain bikes to protect the resources, particularly the soils and ground cover (Knizel and Chase 1987). Chase charges that "...many people will piously declare that mountain bikes are bad for trails, when they really just don't like them (Knizel and Chase 1987, p.37)".

User Conflicts

James Whittaker (1974) explains that hikers and backpackers generally are searching for naturalness and peace and quiet; encountering another hiker can interfere with this objective. "The bigger, brighter, louder, smellier the unnatural object is, the more it will offend and reduce the quality of the hiking experience (Whittaker 1974, p. 72)". Listing compatibility of trail users, Whittaker ranks bicycles second only to other foot traffic, since they are self-propelled, non-polluting and noiseless. McCay and Moeller (1976) studied and surveyed trail users regarding compatibility. They found that most trail users enjoy meeting their own kind and don't like meeting users that are

faster and more mechanized than they are. All types enjoyed meeting hikers but hikers were not overjoyed at encountering other users.

Most avid mountain bicyclists felt that they were robbed when bikes were prohibited in Wilderness in June of 1984 (36 CFR 261.16). They also considered themselves betrayed by the Sierra Club, a group that cyclists traditionally supported, when the board of directors voted to include mountains bikes on the list of prohibited off-road vehicles (ORVs) in Wilderness (Kita 1986). Kita's article is excellent in presenting both sides of the story concerning bike use on trails. He points out that cyclists have a bad image among environmentalists due to a relatively few individuals, irresponsible "gonzo" riders, and the sensationalizing of mountain biking found in many print advertisements.

Glenn Odell, director of the National Off-Road Bicycle Association (NORBA), is very bitter about the closing of all Wilderness to mountain bikes. He believes that the bikes should be kept out of some Wildernesses, but others are ideal for biking, such as Point Reyes in California. He argues that the impacts of bikes are less than horses and the mechanical characteristics are similar to that of horseshoes, saddles, and bridles, as well as snowshoes or cross-country skis; all provide a physical advantage over the environment. Kita (1986, p. 77) relayed Odell's objectives, to eventually "....see this activity permitted where it doesn't create a problem." Odell further explained "...I'm a conservation-oriented person. I've been a backpacker and outdoor enthusiast all my life, and I don't want to see the environment degraded....Everyone has to give a little. The cyclists must clean up their image, the land managers must respond to what the users come up with, and the hikers must be willing to

share. To fragment the trail family would be a tragic waste...(Kita 1986, p. 77)".

Odell explained, "I find the entire situation analogous to a case of sibling rivalry. Often, when you've got a child 5 to 6 years old who's used to the undivided attention of his parents and you introduce a newborn into that family, they have problems adjusting to dividing and sharing what used to be their exclusive domain (Kita 1986, p.70)". He acknowledges that the irresponsible downhill "gonzo" riders who ride uncontrolled without respect of other users, have caused problems of bike acceptability on trails.

Stuart Crook (1987) of BikeCentennial, explained that mountain bike conflicts with other trail users is not because of the bike itself, but how it is used. Complaints are generated by a minority of inconsiderate riders, buzzing uncontrolled down steep hills, surprising other users. He suggests that educating users (both bikers and other users) about the types of use to be expected and the ways to ride safely is a key to minimizing conflict. In high use areas, zoning may be necessary. Bikers don't need to have special trails built. Coordinated use on existing systems could adequately serve all involved.

Bill Wilkinson (1987), executive director for Bicycle Federation of America, explained that today's conflict with mountain bikes is a new chapter in the age-old conflict of a mix of trail users. The amount of conflict depends on terrain and volume of use. Wilkinson suggested that zoning in areas of heavy use and conflict can be an appropriate solution.

There are places near metropolitan areas that have definite problems with user conflict. There are too many people and not enough areas for recreation. In a conversation with Glen Odell, he suggested that zoning is not an alternative when there is not enough resource to satisfy all types of users. For example, some of the small canyons around Los Angeles are inundated with recreationists looking to hike or to ride jeeps, ATVs, motorcycles, horses, and bikes; all on the same trail. Terry Ellis, District Ranger at Arroyo Seco in the Angeles National Forest explained that with 600 people a day on the trails it does present numerous problems. The available trail is carved into the steep sidehill, with no room for separate systems.

In 1984, the High Country News in an article opposing trail use of mountain bikes noted, "Mountain bikes also complicate the already sticky question of multiple use. In a sense, bikers form another special interest group...All want the freedom to pursue their idea of fun in the great outdoors (Locke 1984, p.5)".

Resource Conflicts

Some suggest that resource damage is a reason to restrict mountain bikes from trails. To date, research concerning mountain bike damage to resources has not been completed. There are very few documented observations of resource conflicts except for word of mouth discussions of observations. Many times resource damage is just a smoke screen for conflict between user types. Soil compaction, soil loosening, erosion, wildlife harassment, and livestock harassment can and has undoubtedly occurred. Areas with large populations of

people and heavy bike use can expect some resource conflicts unless measures are taken to prevent it.

John Byfield, sales representative for Service Cycle and a NORBA race organizer, advocates the use of the old fire and logging roads on National Forest and BLM-administered lands as ideal routes for mountain bikes. He contends that continuous trail use can create erosion. "...[B]ikes going over the same section of trail will take the same line ...coupled that with the fact that the weight of a mountain biker isn't spread out over as wide a strike surface...The bikes will cut a trough in the middle, and erosion will start (Knizel and Chase 1987, p.37)".

Neal Murdock (1987), NORBA representative and mountain bike advocate from Crested Butte, Colorado, explained the area around Crested Butte is ideal for mountain bikes. The area offers many abandoned mining and old logging roads; conflicts with other users and encounters with vehicles are rare. Neal explained that with all the trails, roads, and cow paths in the area, there is no reason for off trail use. The biggest conflict in this area is with the ranching community. There are some incidents of cattle harassment but the major problems lie in the fact that people neglect to close gates. Neal credited the Colorado Mountain Club with promoting safe, responsible mountain bike use by providing groups with an excellent training program.

As touched upon above, the Wilderness issue was legally closed in June, 1984 when federal regulations outlawed bicycle use in all federal Wildernesses (36 CFR 261.16). Use of bikes in Wilderness remains a major resource conflict across the country. "Most cyclists are aware of the law and abide by it.

Others view a $25 fine as a suitable 'admission price' for the wonders of nature that await them (Kita 1986, p. 73)".

A BRIEF SUMMARY OF CURRENT RESPONSES TO THE ISSUES

Many places are becoming known among bikers as attractive areas for biking due to trail and road system availability. The majority of these areas are not actively promoted by land managing agencies, as such, but their attractiveness for biking is passed by word of mouth and magazine articles. Most of these areas do not have their route systems mapped or designated, but offer bikers a place to ride and explore. Most national forests aren't actively planning for mountain biking activity and usually become involved when conflict with other users becomes a problem.

As already noted, some areas such as Crested Butte in Colorado have become a mecca for mountain bikers. Ski areas such as Devil's Thumb in Fraser, Colorado, (Leaf 1983) and Mt. Bachelor in Bend, Oregon, both within national forest-administered lands, are examples of areas which are promoting their ski trails for mountain bike use. Land management officials can do much for the mountain biking public simply by designing route systems for a variety of users, signing the routes, and providing maps and brochures.

Bruce Johnson (1987), of the Missoula Ranger District, Lolo National Forest coordinated the management plan for the Blue Mountain Recreation Area, a heavy use area near Missoula, Montana. This area receives all types of use: 4-wheel-drive vehicles, motorcycles, horseback riding, hiking, and mountain

biking. By working with all the user groups, including Stuart Crook of BikeCentennial, the Forest Service coordinated a system of routes to serve all uses. These routes were zoned by user classes, ranked by level of mechanization, as follows:

A.) Four-wheel drives

B.) All-terrain-vehicles (ATVs)

C.) Motorcycles

D.) Bicycles

E.) Horses

F.) Hikers

G.) Handicapped Individuals

Routes were designated by the highest type of use allowed. That use and all lower user classes are acceptable and the route is closed to all higher use classes. The zoning has created a safer, more enjoyable recreation area for all users. The District is rating and signing difficulty levels using the ski trail difficulty symbols.

Dave Nelson (1987), on the Hayward Ranger District of the Chequamegon National Forest explains that their fall use of the forest's cross-country ski trails is becoming popular, with the September "Fat Tire Festival" being the drawing card. An orienteering event occurs on the Forest, while a main bicycle race occurs on private land using the Birkebeiner cross-country ski racetrack. The Forest has not suffered any resource damage from mountain biking, and conflict with other users is non-existent. All trails outside of Wilderness are open to mountain biking. They have not found it necessary to designate special routes

for mountain bikes because the cross country ski trails provide excellent biking opportunities.

Jim Paxon (1987), on the Gunnison Ranger District, Grand Mesa, Uncompahgre and Gunnison National Forests in Colorado administers the Crested Butte area and is utilizing the Recreation Opportunity Guide (ROG) system to suggest routes for mountain biking. He is rating the difficulty of the routes utilizing the new trails handbook standards (Forest Service Handbook, 2309.18). The Crested Butte area is one of the heaviest use areas in the country for mountain bikes. Resource damage is virtually non-existent from bike use. Paxon explained that most bikers will pick up their bikes and walk around the steep or muddy areas. Paxon is currently working with the local users, including the Colorado Mountain Club, to adopt trails. He hopes the clubs will help prepare pamphlets that promote routes away from the surrounding Wilderness. There have been some problems with bike use in their Wilderness; but an active ticket-writing campaign, along with making available alternative routes, is helping to reduce the problem. Paxon believes that mountain bikes do not damage trails.

Dwight Johnson (1987), of the Bend Ranger District of the Deschutes National Forest has encountered some trail problems due to mountain bikes and admits that the District has very few places identified for this activity. Bend, Oregon, has one of the highest per capita membership of NORBA members, and demands for trails and routes are predictably high. In 1986, Mt. Bachelor ski area began renting mountain bikes for use on the ski trails, including some downhill runs. Currently, only one trail system on the forest is advertised for mountain biking. It is receiving 75 to 100 people per weekend. This trail is a steep, cross-country ski run not designed for mountain bikes. The

water-bars in this trail are of the log style developed for a horse/hiker trail; bikers simply go around them, creating a by-pass for water which makes the water-bars ineffective. This situation is causing some erosion and unwanted widening of the trails. Johnson suggests designing more of a rolling-dip type of water-bar for mountain bike trails. He is looking to expand routes for mountain bikes in the near future to relieve some of the pressures of overuse on the existing route.

British-based, Friends of the Earth (1984) analyzed the potential impacts of mountain biking in England and endorsed them as "a valuable recreation tool", based on numbers of people that can become involved and the ability to spread out the use. "Friends of the Earth members advocate that advance preparations in recognizing the increased demands for mountain biking facilities is essential in easing conflicts with other users and protecting the environment from adverse use (1984, p.5)." They assess that mountain bikers "...will cause less damage than will a horse and rider, and certainly less damage than a mopped, motorbike, car or farm vehicle (1984, p.5)." As a group, they welcome the popularity of mountain bikes as a recreational activity and acknowledge that there may be "...perceived conflict between different user groups."... and "...concern over the possible environmental impact...particularly in sensitive wildlife areas (1984, p.5)." The group has established a code of conduct for mountain bike users.

Hank Barlow, in Mountain Bike Magazine (July-August 1986), stresses the importance of responsibility in caring for the land and trails. Barlow advocates going out of the way to show respect to other users, always keeping in mind that a hiker or horse rider may be just around the corner. "It's as if

any good impression we make will only count with that one individual but any bad impressions will be the equivalent of ten people....it's just the way it is (Barlow 1986, p.7)." He suggests that mountain bikers pitch in and volunteer to construct and maintain trails. "There's no more effective way to make known our concern and love of the land than by participating in maintaining the lands we recreate on (Barlow 1986, p.7)."

One of NORBA's objectives is to educate people about responsible riding. The NORBA "off-road cyclists code" is circulated at many bike shops. Most biking periodicals emphasize responsible riding following the "NORBA Code" (exhibit 2).

DISCUSSION

Standards and Difficulty Levels

Mountain bikers are a diverse group, searching for many different types of experiences. The majority of bikers are out "to enjoy nature and the outdoors" (USDI 1986, p. 28). While most riders may be satisfied riding on low standard roads, there is a demand for challenging downhill runs on narrow trails. Many people are becoming interested in week-long bike packing/camping trips.

Jack Remington (1987), State of Oregon Trails Coordinator, explained that the majority of riders prefer low standard roads closed to vehicle traffic where there is room to maneuver the bike and no conflict with horses and hikers. He suggested that a full day trip is generally planned around a 10 to 20 mile

route while a 50 to 100 mile route could be planned for a week. Remington felt that most riders can handle up to a 10 percent uphill grade; steeper grades are too difficult for average riders.

Don Douglas (1987), author of mountain bike guidebooks has said that a bike pedaled by a skilled rider can go just about anywhere the handlebars can fit, even up grades as steep as 30 percent for short distances. He feels that land managers should provide routes for different types of riders. The difficulty ratings are subjective, but need to be accurate enough to give people an idea of what to expect. They should be based on factors such as surface conditions, elevation gain and loss, and technical difficulty. People also need to know information such as weather conditions, drinking water availability and shade (for desert riding) to prepare themselves for their biking adventure.

Neal Murdock (1987) has explained that bikes and riders are capable of riding extreme grades (30 to 40 percent) downhill, but uphill grades in excess of 15 to 20 percent are too steep for most riders.

Dick Spray (1987), Assistant Director of Recreation and Wilderness in the Forest Service Southwestern Region and an avid mountain biker, said that a good day ride is about 30 miles on primitive roads, with grades not exceeding 5 to 6 percent for extended distances. He feels that the Forest Service Trail Handbook (2309.18) standards accurately describe difficulty levels. If these standards are applied to both downhill and uphill use, riders should expect to get off and walk, push, or carry bikes through steeper sections. Spray suggested that long, steep downhill trails with poor sight distance be avoided.

Stewart Crook (1987), who has been working to establish some difficulty level standards, suggests the following guidelines for grade: easy trails, 6 to 7.5 percent; more difficult, maximum 10 percent on good surface; most difficult, 10 to 12 percent grade for up to 200 yards. He feels that an expert rider in good shape can ride up to a 20 percent slope on a good stable surface. He added that difficulty levels are very subjective. Grade, width, surface stability, surface smoothness and sight distance are all factors that should be considered.

I contacted several local riders to gather their opinions on trail standards. Bob Woodward (1987), of Bend, races locally and out-of-state; he also rides for pleasure. Woodward's pleasure rides average 10 to 20 miles a day. He believes that almost any terrain can be ridden, but single-track runs are most challenging and fun. He prefers loop trails, but will arrange for a shuttle to ride a particularly good point-to-point route. Riders he associates with prefer natural scenic routes but realize that they cannot always avoid logged areas.

Dennis Heater (1987), another Bend rider, rides with 15 other local riders on summer weekends. He both races and rides for pleasure, logging about 150 to 200 miles per week on a mountain bike. He personally enjoys the challenge of the uphill ride on trails and unpaved roads. His group averages 25 to 35 miles per day, but he believes most riders average about 15 miles per day. In his riding experience he has encountered no major conflicts with other users. He believes the key to multiple trail use is mutual courtesy among users, following the NORBA guidelines, and using common sense. For example, Heater gets off and walks his bike when he meets hikers or horses on trails. He and

his group of riders prefer long routes, and enjoy riding logging roads and exploring country where nobody else goes. "I'm out for the beauty", he explained.

Bud Rogers (1986), a Redmond rider, gets together with an informal group of recreational riders that enjoys long downhill trails on the Deschutes and Ochoco National Forests. Rogers, a converted motorcycle racer, said that mountain biking offers exercise and an outdoor experience without the noise and smell of exhaust. One of his favorite rides is the Lookout Mountain Trail. His group prefers narrow downhill trails but unused logging roads are acceptable.

Current Situation

In general, the Forest Service has done very little to prepare for the demands of mountain bike use on the national forests. The majority of action relating to mountain biking has been in response to conflicts with other Forest users and resources. Most Forests have a multitude of low standard roads, both open and closed to motorized vehicles, that offer ideal opportunities for mountain biking.

Road Riding Opportunities

Mountain bike use on the Ochoco National Forest is increasing as people search for places to explore that are away from crowds and conflicts. The Ochoco currently has over 5000 miles of roads. Of this system, over 3700 miles are low-standard, two-track roads open to motorized traffic but used very little except during hunting season. There are over 600 miles of blocked-off, closed roads that may offer routes away from four-wheel motor vehicle traffic. There are also many miles of overgrown routes that may offer future opportunities. Of the current 86 miles of system trails, 50 miles are outside of Wilderness

and open to mountain bikes. The most popular trail rides are Lookout Mountain and Round Mountain. Prior to becoming Wilderness, the Mill Creek area was popular for a few riders. The Wilderness is currently receiving some illegal mountain bike use.

The proposed Forest Plan (1986) proposes a trail system of 210 miles, including 170 miles outside of Wilderness that will be open to mountain biking. This system also includes a proposal for a cross-state, east-west intertie trail system linking the Pacific Crest Trail in the Cascades and the Desert Trail in Eastern Oregon. The proposed location for part of this route includes a major portion of the historic Summit Trail, an early access route across the Ochoco Mountains. A recent study of this latter trail identified the historical significance of many segments (Gowan 1986). It is proposed that this route be managed for its historic values and scenic recreation.

The Ochoco National Forest currently is managing two roadless areas, Lookout Mountain (16,581 acres) and Silver Creek (2,510 acres), for nonmotorized backcountry recreation opportunities. Lookout Mountain has a trail system and closed road system in place that are receiving some minor mountain bike use. There are no developed trails in Silver Creek.

The proposed Forest Plan identifies two additional areas, Cottonwood Canyon (9,777 acres) and Rock Creek (9,336 acres), to be managed for nonmotorized recreation. There are currently no maintained trails in either area, but a system is planned in both areas. The proposed Plan also directs managing Green Mountain (7,000 acres) primarily for motorcycle and four-wheeldrive country

opportunities. A trail through this area currently receives minimal use by all-terrain vehicles (ATV's), motorcycles and mountain bikes.

Proposals and Recommendations

In searching for routes to recommend for mountain biking, I talked to the local riders and Forest Service employees who own mountain bikes for their input. I looked at current and historic trail system maps, and obtained a 1915 Forest map from the Forest Archeologist. The old maps identified original routes through the area. Current road systems, including those closed to motor vehicles were identified from District Fireman's Maps.

Intermittent Historic Routes

Knowing that road routes would be no problem, I concentrated my efforts on trail routes. I personally road many of the trails, looking for potential conflicts with other users and potentials for resource damage. I was particularly interested in the historic route system. The Forest was studying the issue of preserving or further developing portions of several of these routes. Many of the locations appeared ideal for mountain biking but are currently unsuitable due to lack of use and maintenance. These routes also showed potential for some historic interpretation opportunities.

To provide for a variety of mountain bike opportunities on the Ochoco National Forest, with minimal conflict with other users and other resource management objectives, I recommend that the following routes be designated, signed and promoted. A Recreation Opportunity Guide (ROG) should be developed for each of these routes.

Summit Trail (Maps 1, 2, 3, 4): The historic Summit Trail (74 miles long) is ideal as a mountain bike route. The total route can be utilized for a week-long bike packtrip, or can be ridden in segments as "day rides" from many starting points. The Summit Trail was originally a pack trail that traversed the complete summit of the Ochoco Mountains, from McKay Creek near Prineville to the South Fork of the John Day River. The route was widened in places to facilitate wagons and motor cars (1920's), and widened even later to facilitate timber harvesting. Nevertheless, this route offers a variety of excellent riding through three Ranger Districts, skirting the edges of

Pack Trail Segment: Summit Trail

Motorway Segment: Summit Trail

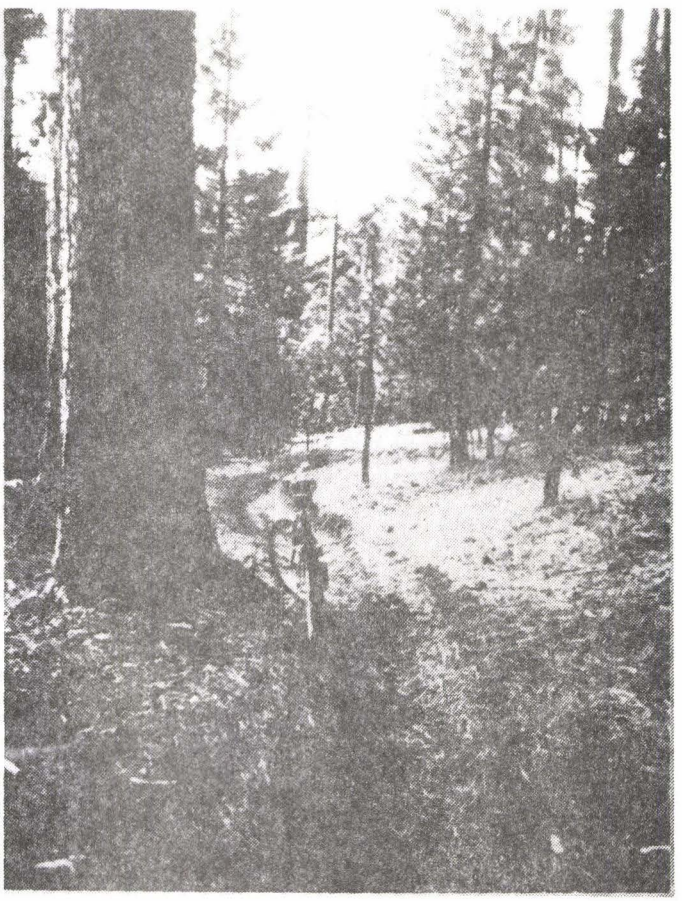
three Wildernesses and accessing several primitive and developed campgrounds. Promoting this trail could draw attention to mountain bike opportunities on the Ochoco National Forest. I am considering pursuing a "Mountain Bikeathon" on this route, involving the help of the Chanmber of Commerce, NORBA, the State Heart Association and local bike shops. This event could be promoted statewide as a fundraiser for charity.

Lookout Mountain (Map 5): The Lookout Mountain area, being closed to motorized vehicles, offers challenging "wilderness-like" opportunities utilizing a closed road and developed trail system. The route can be accessed from several points and ridden as a short day trip, a long day trip or an overnighter. Using Walton Lake Campground as a base camp, there is a good ride up the Round Mountain Trail (805) to the Independent Mine and on up to the Lookout Mountain summit. A rider may elect to camp and explore the top of Lookout Mountain or continue on the route following the Lookout Mountain Trail (804) to Ochoco Ranger Station and Campground. This section has some challenging rocky areas that would be classified as "most difficult." This route receives only minor hiking and horseback use. The return to Walton Lake is along a paved road, Forest Road 22. Other alternatives for riding Lookout Mountain include shuttling bikes to the Independent Mine and riding the Lookout Trail back to the Ochoco Ranger Station; or, starting at the Ochoco Ranger Station, ride Forest Road 42 (paved) to the Independent Mine road, then to the summit and back down the trail to the ranger station.

Round Mountain (Map 5): The Round Mountain Trail (805) is a good day ride. Starting at Walton Lake, the trail climbs a long, sustained grade to the summit of Round Mountain, offering scenic views to the north. This trail rates as "more difficult" due to the sustained grade and pitches of over 10 percent grade. On the south side of the mountain, the trail continues down a 10 to 15 percent grade for 4 miles where it intersects with Forest Road 42. From here, there are three options for returning to Walton Lake: return on the trail; turn east, follow Forest Road 42 for 2.5 miles, then follow Forest Road 4210 (gravel) back to Walton Lake; or turn west on Forest Road 42 and follow it 7 miles downhill to its junction with Forest Road 22, turn north and proceed 7 miles to Walton Lake. Road 42 is one of the major log haul routes for this Ranger District.

Downhill on the Round Mountain Trail

Green Mountain (Map 6): The Green Mountain Trail (831) is a scenic ride over rolling terrain through juniper and pine forests and openings between Harvey Gap and Forest Road 3380. The north end of the trail is accessible from the Wildcat Campground by a long (5 mile), uphill climb on a good gravel road to Harvey Gap. The trail is wide and there is the possibility of meeting an ATV or motorcycle. This eight-mile trail classifies as "more difficult" because of a series of short, rough, steep sections. The return trip to Wildcat Campground is a steep (5 mile), downhill ride on a secondary gravel road (FR 3380) to the intersection with Forest Road 33, then north for 5 miles back to Wildcat.



The wide scenic Green Mountain Trail

Barnhouse (Map 7): A trail route offering a "most difficult" challenge is the Barnhouse system, which is not currently maintained. From Barnhouse Campground travel south on the paved road (Forest Road 12) to the Summit Trail route (Forest Road 2630), a good gravel road. Turn west, following the Summit Trail 4 miles to a seldom used jeep road (Forest Road 2630-780). Follow the jeep road north for 3 miles where it connects with the Barnhouse Trail. The trail benches the hillside until it intersects the paved road just below Barnhouse Campground, about 4 miles.

Hardscrabble (Map 8): The Hardscrabble area offers excellent road riding opportunities in natural appearing surroundings out of Frazier Campground. Map 8 indicates a system of roads that may be established and classified as "easiest" mountain bike routes. There is insignificant vehicle traffic on all of these roads. Some of them are closed to motor vehicles.

I am currently coordinating with the State of Oregon Department of Parks and Recreation to include the Summit Trail, Lookout Mountain, Round Mountain, and Green Mountain routes in their soon-to-be-published "State Mountain Bike Guidebook".

There are many other areas that have potential for excellent bike riding. As the trail system is developed in the areas proposed for nonmotorized recreation management, opportunities for mountain bike routes will expand. Existing closed roads and little used road systems can be further researched for biking potential and included in the route system.

Signing of the recommended routes can be accomplished using a Carsonite signing system to show allowed uses and difficulty levels. Carsonite posts with trail diamond stickers may also be used intermittently to mark the route between intersections.

Routes may be promoted through media presentations, recreation opportunity guides, and mountain bike trail brochures. The guides and brochures may be revised as needed to inform users of changes in trail conditions, user and resource conflicts (e.g. locations of logging traffic) and other changes in the system.

CONCLUSIONS

Providing Opportunities

The growing popularity of mountain biking indicates the need to provide a variety of opportunities for this activity on the national forests. Most national forests have the potential to meet this demand on existing road and trail systems, old logging roads, and historic trails. Other potential routes include those originally developed for skiing, hunting and other resource management activities.

The best source of information about potential routes comes from mountain bikers themselves. To find riders, contact local bike shops and have them spread the word for you. Often there are riders among Forest Service

employees, particularly seasonal workers on the districts, who have ridden trails and roads and are willing to share their experiences with you.

Review the recreation opportunity spectrum (ROS) inventory and develop routes in each type of area. Develop challenging routes in the semiprimitive and primitive areas to provide alternatives to illegal biking in Wilderness. Identify "more difficult" and "most difficult" routes in these areas to offer challenges that are in line with the management or theme of the area classification.

Tie in with the road management program. Roads being closed to motorized vehicles can become excellent biking routes. Closures can be accomplished that will facilitate bikes. A deep rolling dip could effectively block car and truck traffic and still accommodate mountain bikes either thru the dip or by designing a narrow access around it. Where gates are utilized to stop motorized vehicles, a narrow access around the end of the gate is important for allowing bike traffic. Signing is important for all road closures to explain the reason for the closure and what is acceptable behind the closure.

Conflicts with Other Users

After identifying potential routes, become familiar with them by riding them yourself. Survey routes to determine the type and amount of current use. If a particular route is used extensively by horses and hikers, direct mountain bikers to other areas where conflicts are manageable. Involve all user groups in resolving the conflicts. Look at zoning as a possible solution. Pursue the

scheduling of use periods where feasible. One-way routes may solve some safety concerns.

Conflicts With Other Resources

If resource damage caused by mountain bikes is located, determine the reasons it is occurring and take measures to correct the situation. Consider hardening trails, installing waterbars, using seasonal closures, relocating the trail, or recommending alternate routes. Inform riders of the problem and suggest measures they can take to correct the situation.

Consult the Forest soil scientist or hydrologist and review the local soils inventories to determine potential erosion problems. Consult with wildlife biologists to locate bike routes outside of critical habitat or closing routes seasonally, as needed. Consult with district resource managers for potential problems with fencing, gate closures, proposed timber harvesting activities, proposed mining or gas and oil activities, or other resource projects that should be avoided. Gate closing problems may be solved by installing self-closing gates or trail cattleguards. Incorporate archaeological surveys when construction is required. Involve the user groups in determining issues, concerns and alternatives.

Route Standards

Use the USFS Trail Handbook (exhibit 3), FSH 2309.18, as a guide for determining trail standards and difficulty ratings. Design routes to meet the ROS experience desired. Factors to consider include tread width, tread surface

smoothness, waterbars (these can be helpful in maintaining a safe speed in downhill runs as long as they can't be by-passed), clearing limits, and grade. For example, a trail in a semiprimitive ROS category would likely be narrower, steeper, and more challenging overall than a trail in a roaded natural ROS category.

Difficulty ratings are very subjective. Factors to consider in determining difficulty ratings include grade, tread width, clearing width, surface stability, surface smoothness and sight distance. If the trail has any "most difficult" sections then sign the whole trail as "most difficult." A flat, open, wide trail could be considered "most difficult" if it traverses a boulder field that must be portaged. A short, steep pitch in a trail may not be "most difficult" if the pitch is not over 300 feet in length. A steep side hill may be "most difficult" even though the grade of the trail is 5 percent and tread width is 24 inches.

Promoting Use

Preparing inexpensive brochures is a good way to inform the public of mountain biking opportunities on the national forests. Include in the brochure a description of recommended bicycling routes (including difficulty ratings), areas such as Wilderness that are closed to cycling, the NORBA code or similar code of ethics, information on minimum impact use, and interpretive information. Possibly, a local club or bike shop may want to develop and publish an inexpensive brochure. Develope ROG's as an inexpensive way to provide riders with specific route information.

Opportunities are many. There are many individuals and groups interested in developing routes for mountain biking. Now is the time for land managers and recreation specialists to get out in front of this challenge.

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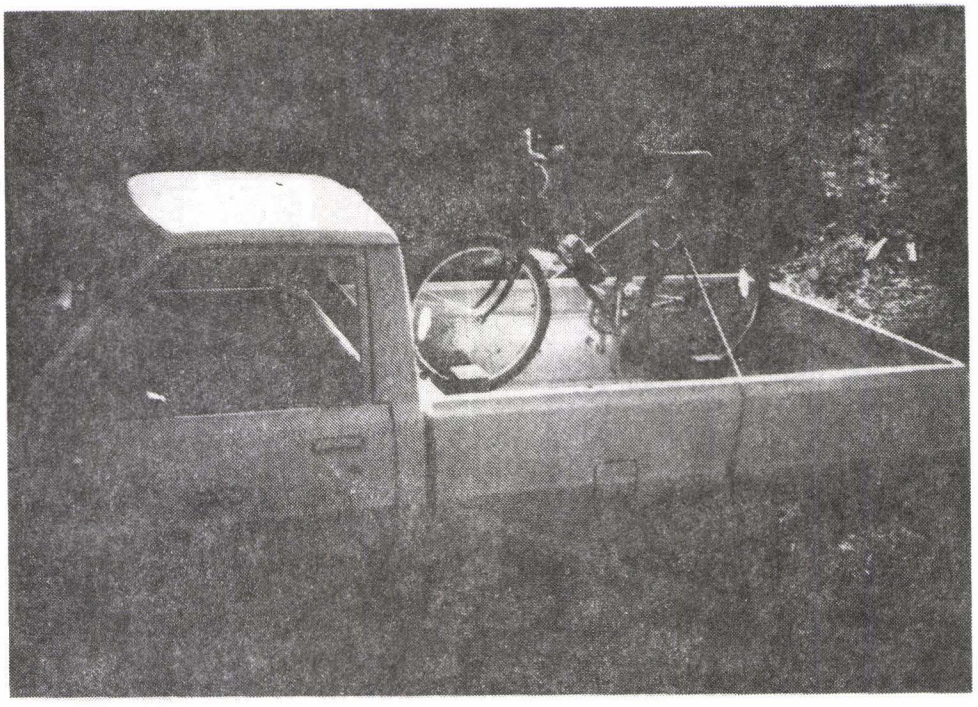
EXHIBIT 1



The Forest Service Mountain Bike

In selecting a bicycle for the Forest Service, I read everything I could find that explained components, compared different brands and models, and explained how to ride and how bike design affects the ride. Mountain Bike Magazine, Bicycling Magazine, and Consumer Report Magazine all had extensive articles comparing bikes. John Schubert (1983) explained that the lower priced bikes are cutting corners, detracting from their ruggedness. Gearing and braking differences are also prevalent. Handling capabilities vary in response to the head tube angle. Shallower head tube angles (67-69 degrees) generally are better for high speed handling but afford less control at slower speeds, while steeper head tube angles (70-71 degrees) offer better maneuverability at the slower climbing speeds. Seat angle differences affect the ride and feel of the bike. For off-road riding the clearance of the bottom bracket and the

shortness of the chainstays and crank arm length must be considered. I found that it was important to have a wide range of gears for negotiating the varying steepness of terrain. A minimum of 15 gears with a lower gear ratio of at least 1:1 (number of teeth on small chainrings divided by the number of teeth on the largest rear gear sprocket) is best for off road travel (Chase 1986, Sussman 1984).

Cantilever brakes are essential to insure a controlled stop (Schubert 1983) and new roller cam brakes are even more effective. A quick release seat is critical in off-road biking since changing seat height is essential. An uphill climb requires a high seat, allowing weight and power to be better distributed to the pedals. The downhill run requires a low seat for a low center of gravity, distributing the weight more over the rear wheel for better control and stopping (Boggs 1985). Alloy wheels are essential for braking in wet conditions and for the added strength needed in off-road riding. Alloy frames, preferably chrome-molybdenum, are important for strength, shock absorption capabilities, and weight reduction. Selecting components such as grades and brands of shifter levers, gears, derailleurs and brakes can make a difference. Most manufacturers are utilizing the same name brand of components such as Sun Tour or Shimano. Lower grade components are used in lower priced bikes.

With well over 50 makes and models ranging in price from under $200 to over $1500, selection of a bike was difficult. It was necessary to spend at least $400 to get a quality bike. I selected a model that rode well, felt comfortable, and was rated highly among the magazine evaluations. The test riding was the deciding factor as I used the same off-road hill climb and off-road routes to test most of the bikes.

EXHIBIT 2

One of NORBA's objectives is to educate people about responsible riding. The NORBA "off-road cyclists code" is circulated at many bike shops. Most biking periodicals emphasize responsible riding following the "NORBA Code" as listed below:

1. I will yield the right of way to other non-motorized recreationists. I realize that people judge all cyclists by my actions.

2. I will slow down and use caution when approaching or overtaking another and will make my presence known well in advance.

3. I will maintain control of my speed at all times and will approach turns in anticipation of someone around the bend.

4. I will stay on designated trails to avoid trampling native vegetation and minimize potential erosion to trails by not using muddy trails or short-cutting switch backs.

5. I will not disturb wildlife or livestock.

6. I will not litter. I will pack out what I pack in, and pack out more than my share whenever possible.

7. I will respect public and private property, including trail use signs, no trespassing signs, and I will leave gates as I have found them.

8. I will always be self-sufficient and my destination objective and travel speed will be determined by my ability, my equipment, the terrain, the present and potential weather conditions.

9. I will not travel solo when bike packing in remote areas. I will leave word of my destination and when I plan to return.

10. I will observe the practice of minimum impact bike packing by, "taking only pictures and memories, and leaving only waffle prints."

Mountain Bike Trail Guide

	Easiest	More Difficult	Most Difficult[1]
Grade			
Max. Pitch	10%	30%	+30%
Max. Sustained Pitch	5%	10%	15%
Length	100'	300'	500'
Turning Radius	6'	3'	2'
Length of Trip			
Day	10-20 mi	20-40 mi	40-50 mi
One-half Day	5-10 mi	15-20 mi	20-25 mi
Clearing[2]			
Width	48"+	36"-48"	36"
Height	8'	8'	Max. 8'
Tread[3]			
Width	24"+	12"-24"	12"
Surface	Relatively Smooth	Sections of Relatively Rough Surface	Varied--Some Portage Required

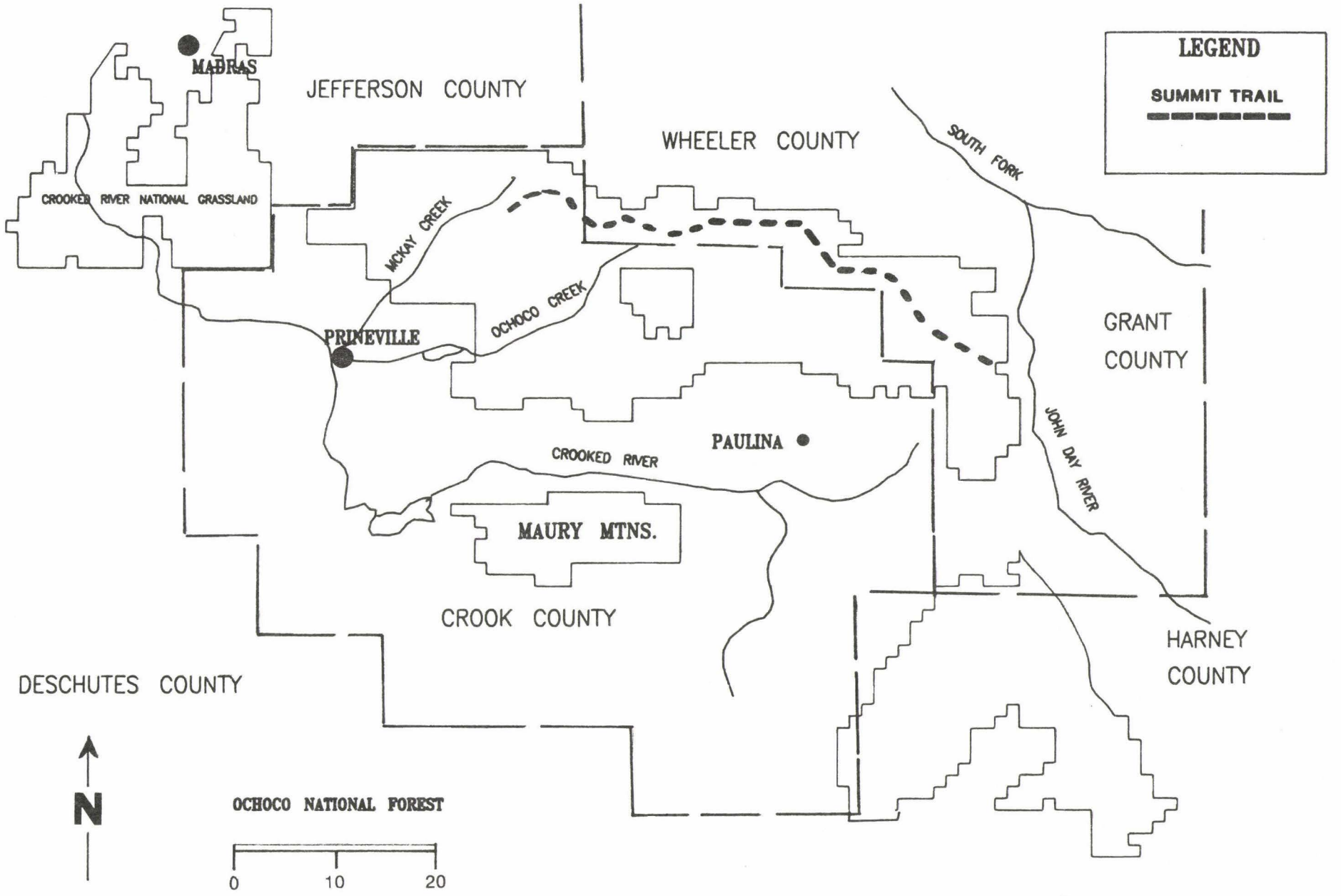
[1] Upper limit of grade and pitch length depends on soil type, amount of rock, vegetation type, and other conditions affecting stability of the trail surface.

[2] Curve alignment to avoid cutting large trees.

[3] Increase tread width 6 inches on switchbacks or where side slopes exceed 60 percent.

Summit Trail Location Map

FIGURE 2



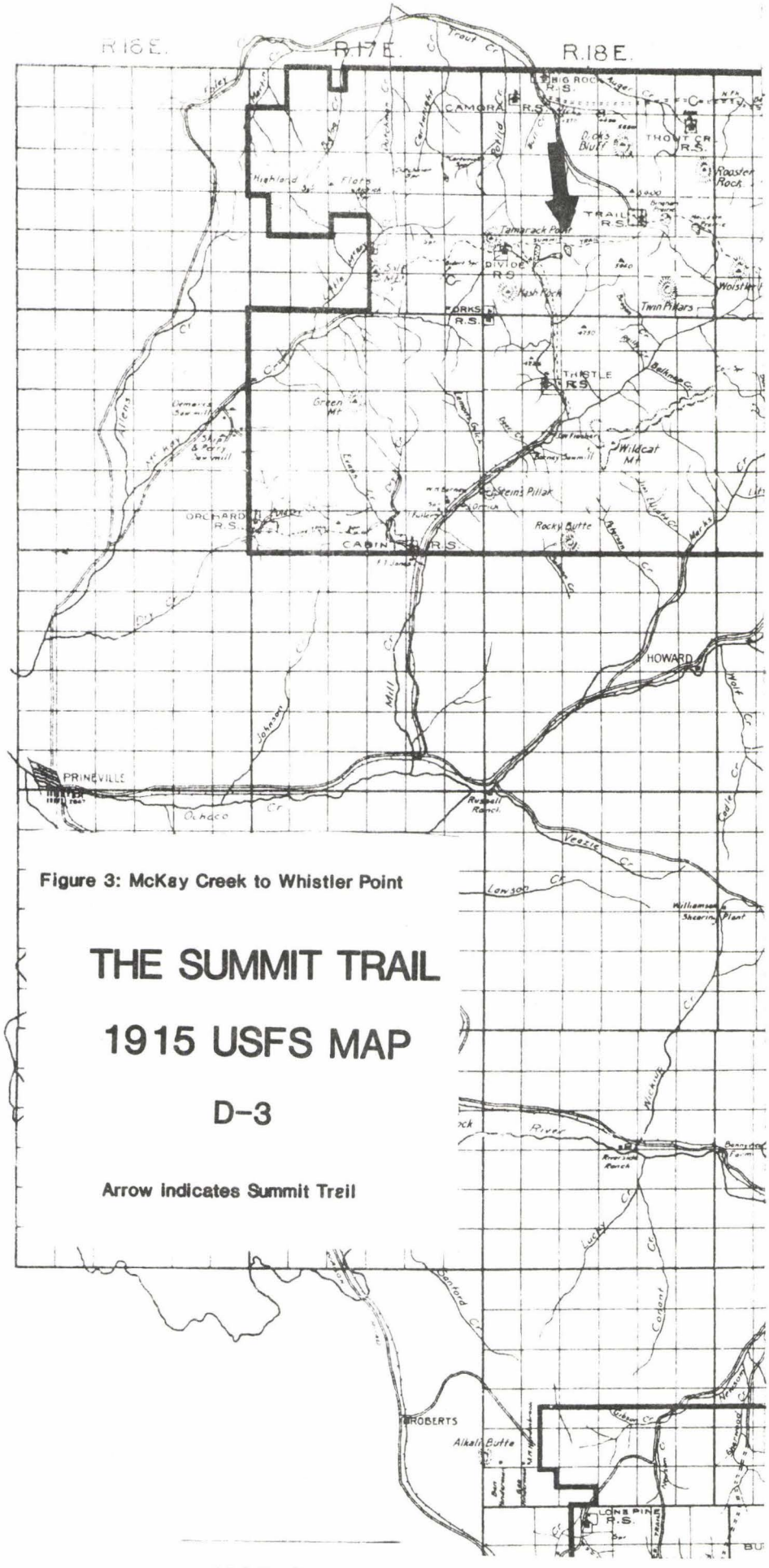


Figure 3: McKay Creek to Whistler Point

THE SUMMIT TRAIL

1915 USFS MAP

D-3

Arrow indicates Summit Trail

MAP 2

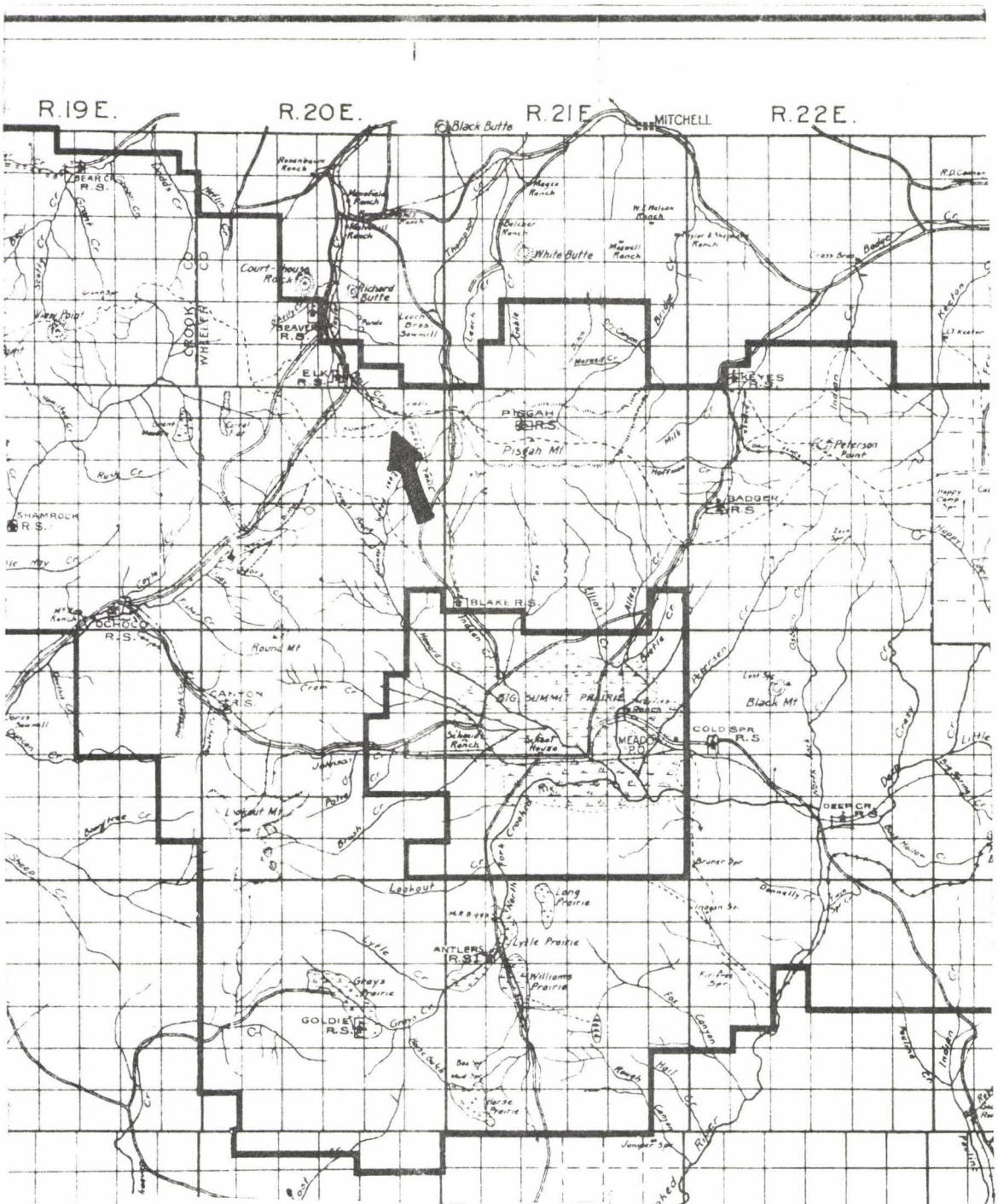


Figure 4: Whistler Point to Happy Camp

THE SUMMIT TRAIL

1915 USFS MAP

D-3, D-1, D-2

Arrow indicates Summit Trail

MAP 3

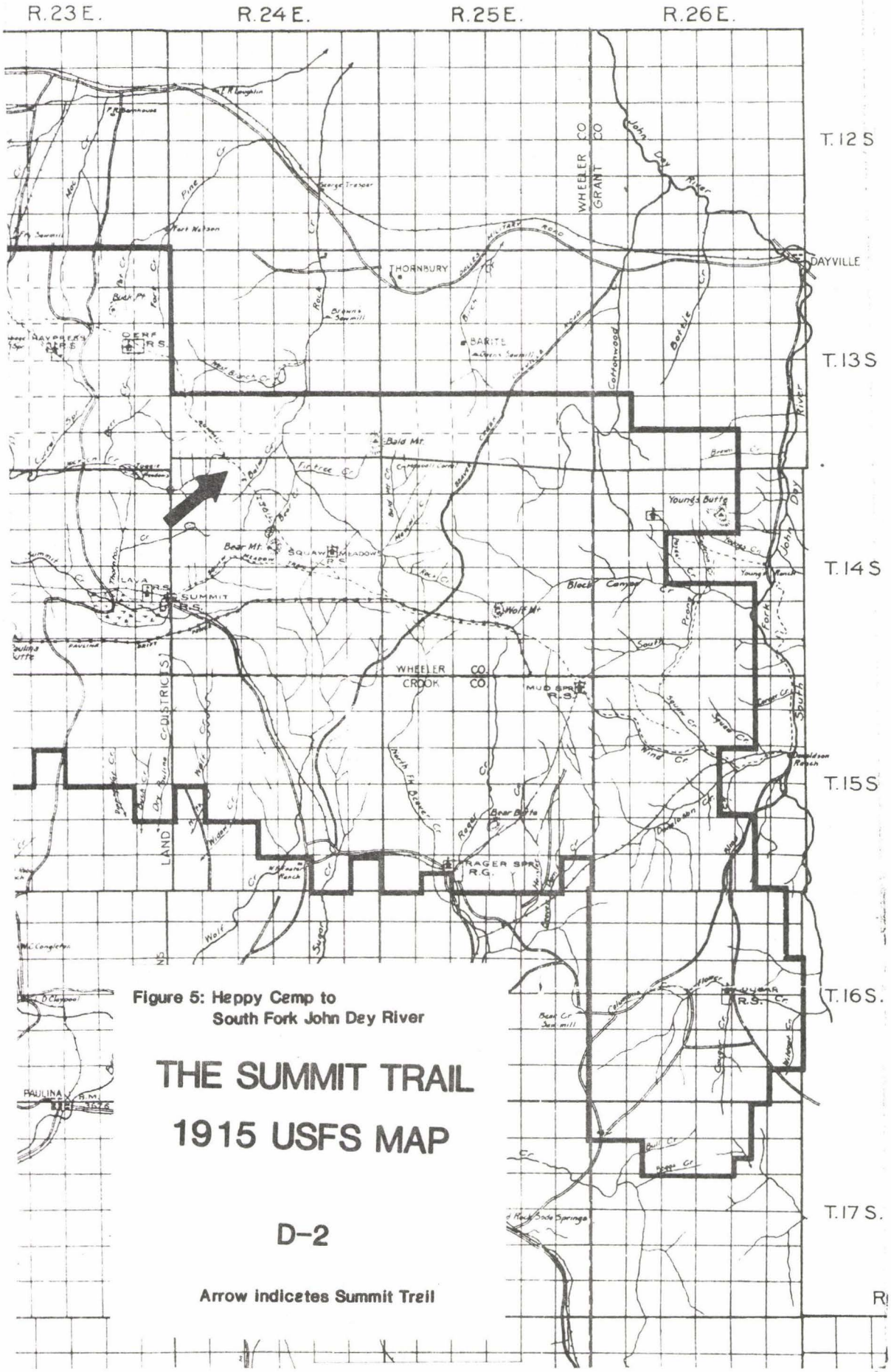


Figure 5: Heppy Camp to South Fork John Dey River

THE SUMMIT TRAIL
1915 USFS MAP

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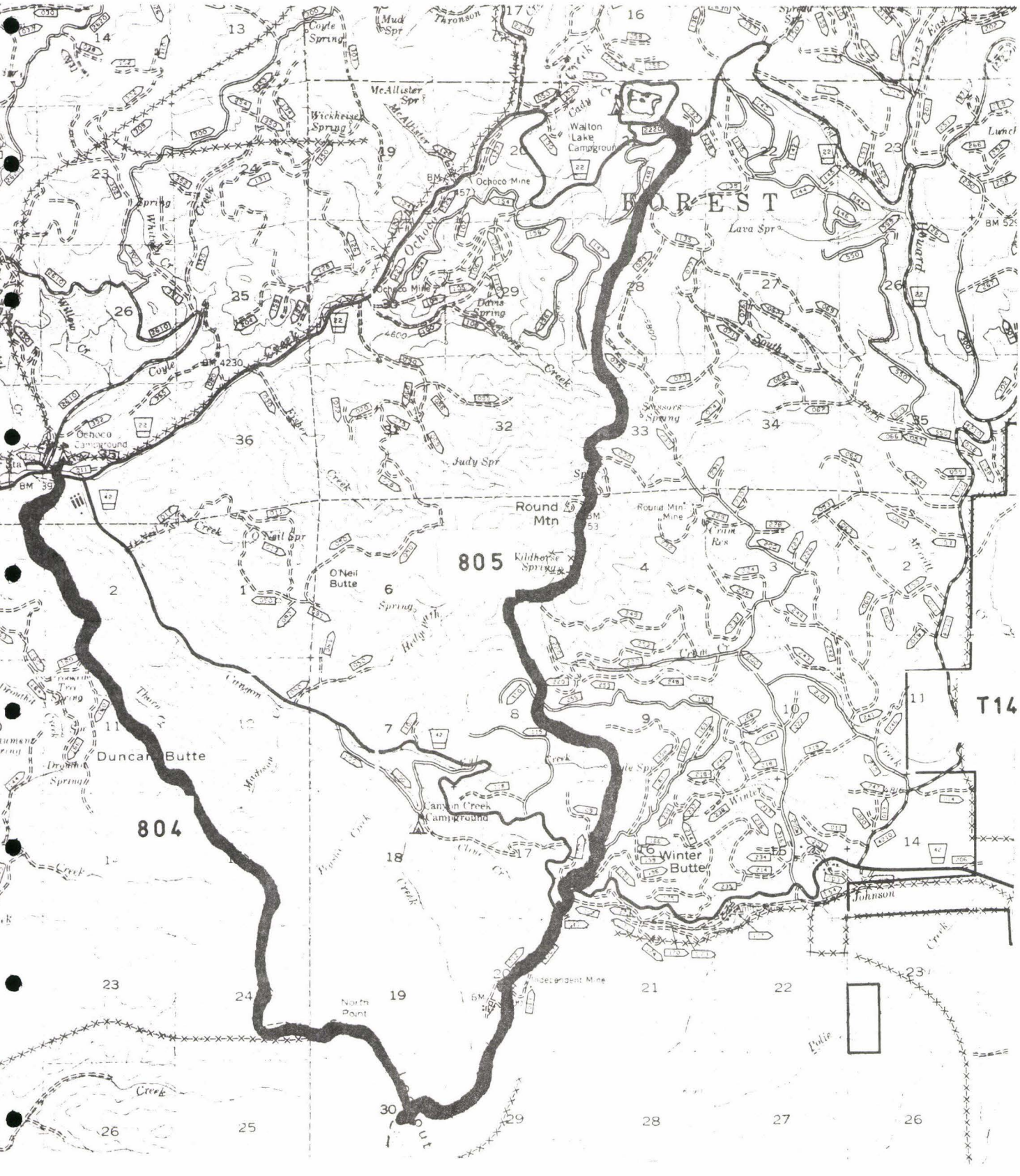
MAP 4

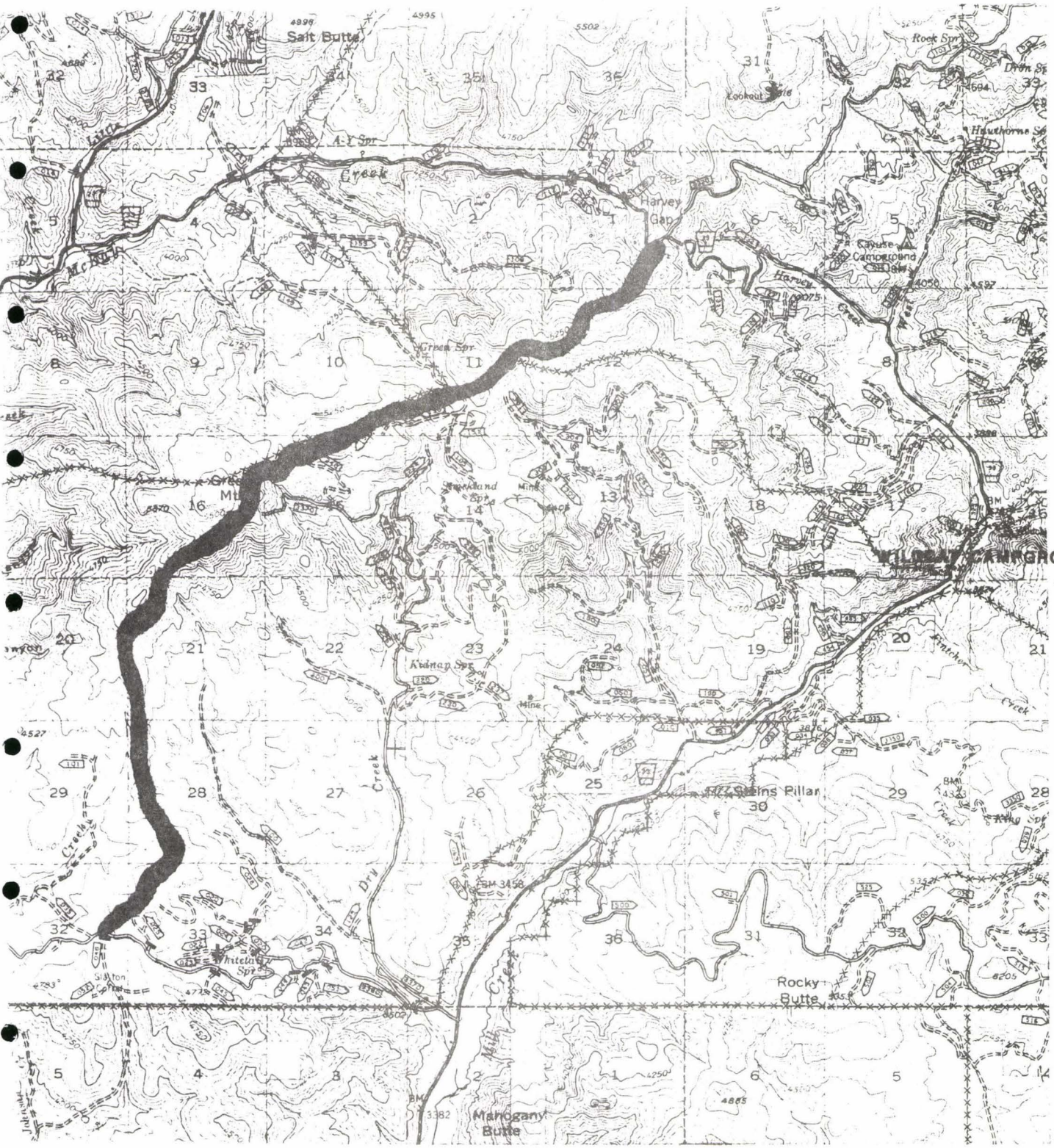
LOOKOUT MOUNTAIN TRAIL (804)

ROUND MOUNTAIN TRAIL (805)



MAP 5

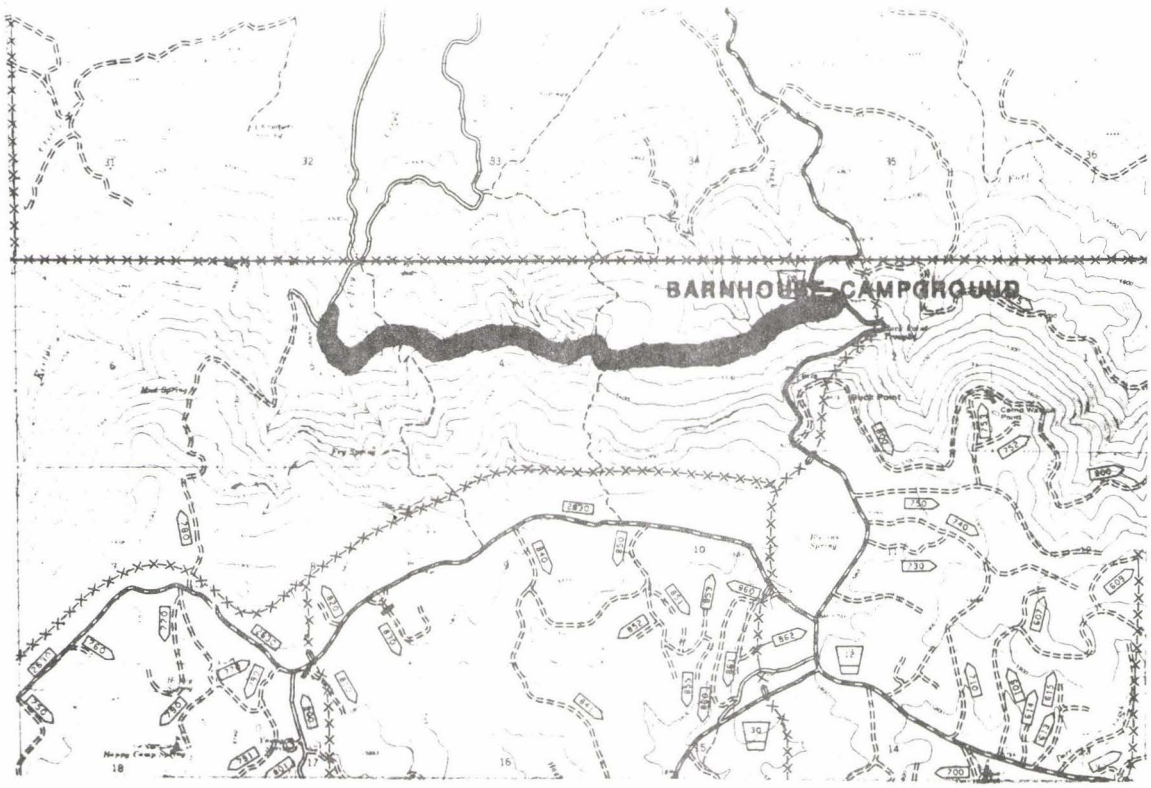
GREEN MOUNTAIN TRAIL SYSTEM



R17E R18E

MAP 6

BARNHOUSE TRAIL SYSTEM

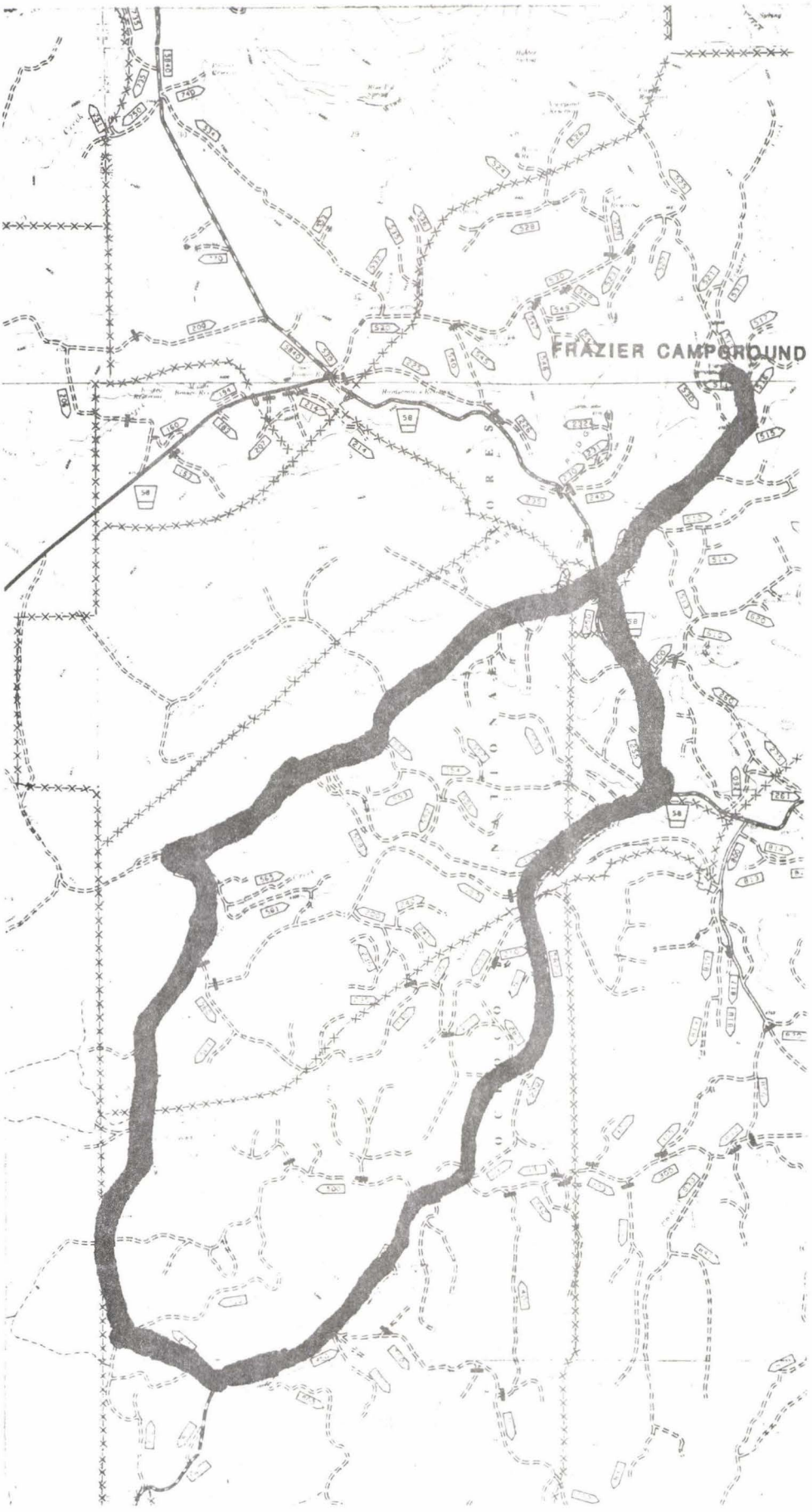


T13S

R23E

MAP 7

HARDSCRABBLE ROUTES



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MAP 8